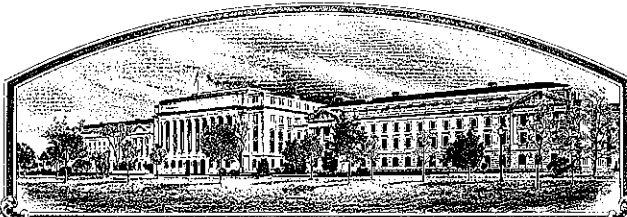


No.



9400211

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

DEKALB Genetics Corporation

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (34 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'CX228'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirty-first day of May in the year of our Lord one thousand nine hundred and ninety-six.

Attest:

Marsha A. Stanton
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Samuel J. Hittman
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(INSTRUCTIONS ON REVERSE)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) DEKALB Genetics Corporation		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. EX222		3. VARIETY NAME CX228	
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) 3100 Sycamore Road DeKalb, IL 60115		5. PHONE (include area code) (815) 758-3461		FOR OFFICIAL USE ONLY PVPO NUMBER 9400211	
6. GENUS AND SPECIES NAME Glycine max L. Merr.		7. FAMILY NAME (Botanical) Leguminosae		FILING Date July 1, 1994 Time <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.	
8. CROP KIND NAME (Common Name) Soybean		9. DATE OF DETERMINATION Summer 1991		FILING Filing and Examination Fee: \$ 2,325.00 Date June 30, 1994	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation		11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		FILING Certificate Fee: \$ 300.00 Date 5-6-96	
12. DATE OF INCORPORATION June 15, 1988		13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Robert E. Roman, Jr. & R. Mark Lawson, Ph.D. DEKALB Genetics Corporation 3100 Sycamore Road DeKalb, IL 60115 PHONE (include area code): (815) 758-3461			

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

a. ☒ Exhibit A, Origin and Breeding History of the Variety
b. ☒ Exhibit B, Novelty Statement
c. ☒ Exhibit C, Objective Description of Variety
d. ☐ Exhibit D, Additional Description of Variety
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership
f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____
g. ☒ Filing and Examination Fee (\$2,325) made payable to "Treasurer of the United States"

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act) ☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? ☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____) ☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? ☒ YES (If "YES," GIVE NAMES OF COUNTRIES AND DATES) U.S.A., spring 1994 ☐ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT [Owner(s)] R. Mark Lawson	CAPACITY OR TITLE Director, Research Operations	DATE June 24, 1994
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE

Origin and Breeding History
CX228

CX228 is an F₄ plant selection from the cross (EX723 x CX366)EX723. EX723 is a selection from the cross A3127 x NK S1492. CX366 is a proprietary variety developed by DEKALB Genetics Corporation.

Summer 1986	The cross EX723 x CX366 was made.
January 1987	The cross EX723 x (EX723 x CX366) was made.
March 1987 - November 1987	F ₁ , F ₂ , and F ₃ generations were advanced by single seed descent.
December 1987	F ₄ plants were grown (range 5, rows 1-19) and harvested individually.
Summer 1988	F ₅ rows were grown out (range 430, row 32 through range 446, row 26). Range 437, row 6 was selected.
Summer 1989	F ₆ seed was yield tested.
Summer 1990	F ₇ seed was yield tested and 125 pounds of seed was produced.
Winter 1990	F ₈ seed was increased and 10 bushels of seed was produced.
Summer 1991	F ₉ seed was yield tested and 260 bushels of breeder seed was produced.
Summer 1992	F ₁₀ seed was yield tested and 5,000 bushels of foundation seed was produced.
Summer 1993	F ₁₁ seed was yield tested and 11,400 bushels of registered seed was produced.
February 4, 1994	The F ₁₁ seed was given the variety name CX228.

Statement of Stability and Uniformity

Soybean variety CX228 has been judged to be uniform for breeding use and testing after seven generations of selfing. CX228 was reproduced and judged uniform and stable for an additional four generations.

Statement of Variants

Seed of CX228 exhibits hila color other than imperfect black up to 0.5 percent. Otherwise, CX228 shows no variants other than what would normally be expected due to environment or that would occur for almost any characteristic during the course of repeated sexual reproduction.

EXHIBIT B

Novelty Statement

CX228 most closely resembles A2396. Both varieties have purple flowers, gray pubescence, and imperfect black hila. However, A2396 is susceptible to Race 3 phytophthora root rot, whereas CX228 is resistant to Race 3 phytophthora root rot.

EXHIBIT C

OBJECTIVE DESCRIPTION OF VARIETY
Soybean Variety CX228

APPLICANT: DEKALB Genetics Corporation
3100 Sycamore Road
DeKalb, IL 60115

1. SEED SHAPE: Spherical
2. SEED COAT COLOR: (Mature Seed) Yellow
3. SEED COAT LUSTER: (Mature Hand Shelled Seed) Dull
4. SEED SIZE: (Mature Seed) 17 Grams per 100 seeds
5. HILUM COLOR: (Mature Seed) Imperfect Black
6. COTYLEDON COLOR: (Mature Seed) Yellow
7. SEED PROTEIN PEROXIDASE ACTIVITY: High
8. SEED PROTEIN ELECTROPHORETIC BAND:
9. HYPOCOTYL COLOR: Light purple below cotyledons
10. LEAFLET SHAPE: Ovate
11. LEAFLET SIZE: Medium
12. LEAF COLOR: Medium Green
13. FLOWER COLOR: Purple
14. POD COLOR: Brown
15. PLANT PUBESCENCE COLOR: Gray
16. PLANT TYPE: Intermediate
17. PLANT HABIT: Indeterminate
18. MATURITY GROUP: II

EXHIBIT C

CX228

Page two.

19. DISEASE REACTION: (0=Not Tested; 1=Susceptible; 2=Resistant)Bacterial Diseases:

Bacterial Pustule: 0
 Bacterial Blight: 0
 Wildfire: 0

Viral Diseases:

Bud Blight: 0
 Yellow Mosaic: 0
 Cowpea Mosaic: 0
 Pod Mottle: 0
 Seed Mottle: 0

Nematode Diseases:

Soybean Cyst Nematode

Race 1: 0
 Race 2: 0
 Race 3: 0
 Race 4: 0
 Other: 0

Lance Nematode: 0

Southern Root Knot: 0

Northern Root Knot: 0

Peanut Root Knot: 0

Reniform Nematode: 0

Other:

Fungal Diseases:

Brown Spot: 0
 Frogeye Leaf Spot: 0
 Target Spot: 0
 Downy Mildew: 0
 Powdery Mildew: 0
 Brown Stem Rot: 0
 Stem Canker: 0
 Pod and Stem Blight: 0
 Purple Seed Stain: 0
 Rhizoctonia Root Rot: 0
 Phytophthora Rot

Race 1: 2

Race 2: 0

Race 3: 2

Race 4: 0

Race 5: 0

Race 6: 0

Race 7: 2

Race 8: 0

Race 9: 0

20. PHYSIOLOGICAL RESPONSES: (0=Not Tested; 1=Susceptible; 2=Resistant)

Iron Chlorosis on Calcareous Soil: 0

Other: 0

21. INSECT REACTION: (0=Not Tested; 1=Susceptible; 2=Resistant)

Mexican Bean Beetle: 0

Potato Leaf Hopper: 0

Other: 0

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:CharacterName of Variety

Plant Shape

A2396

Leaf Shape

CX264

Leaf Color

A2396

Leaf Size

CX264

CharacterName of Variety

Seed Coat Luster

A2396

Seed Size

CX366

Seed Shape

CX366

Seedling Pigmentation

CX366

5

EXHIBIT C
CX228
Page three.

23. DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison
Data

VARIETY	NO OF DAYS MATURITY	PLANT LODGING SCORE	PLANT HEIGHT CM	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				Width cm	Length cm	% Prot	% Oil		
CX228	125	1.6	89	--	--	--	--	17.4	2-3
A2396	125	1.7	89	--	--	--	--	15.0	2-3

9400211

EXHIBIT E**Statement of the Basis of Applicant's Ownership**

CX228 was originated and developed by a breeder employed by DEKALB Genetics Corporation. By agreement between DEKALB Genetics Corporation and the breeder, all rights to any invention, discovery, or development are assigned to DEKALB Genetics Corporation. No rights to such invention, discovery, or development are retained by the breeder.